

**METHODS AND APPARATUS FOR FORMING A  
CHLORINE-DOPED OPTICAL WAVEGUIDE PREFORM**

**Abstract of the Disclosure**

5           A method of manufacturing an optical waveguide preform includes exposing a soot preform to an atmosphere including a chlorine-containing compound and thereby doping the soot preform with chlorine, wherein the absolute pressure of the atmosphere is greater than about  $1.013 \times 10^2$  kPa. An apparatus for manufacturing an optical waveguide preform using a soot preform includes a furnace defining a chamber adapted  
10       to contain the soot preform and including a heating device operable to heat the chamber. A fluid control system is operable to provide an atmosphere including a chlorine-containing compound in the chamber at an absolute pressure of greater than about  $1.013 \times 10^2$  kPa.

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